

REMARKS

Claims 1 - 43 were previously pending in this Application. Further to a Restriction Requirement of the Examiner (as set forth in the previous Office Action dated March 21, 2008), Claims 24 - 43 were provisionally elected for further consideration in this Application. The previous Restriction Requirement of the Examiner has now been made final. Accordingly, the Applicant has cancelled Claims 1 - 23 herein.

Thus, **Claims 24 - 43** are presently pending in this Application. Independent Claim 24 and dependent Claims 25 - 43 are directed at a pipe assembly for installation in a borehole. Of these Claims, the Examiner has indicated that **Claims 42 and 43** would be allowable if rewritten to include the limitations of the base claim and any intervening claims.

With respect to the remaining Claims, the Examiner has rejected **independent Claim 24 and dependent Claims 25, 26, 30, 31 and 35 - 40** under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 4,643,229 issued February 17, 1987 to Hickin ("Hickin").

Further, the Examiner has rejected the following Claims under 35 U.S.C. 103(a) as being unpatentable over the noted references:

- (a) **dependent Claims 27, 28, 32 and 33** - over Hickin in view of U.S. Patent 5,413,149 issued May 9, 1995 to Ford et. al. ("Ford");
- (b) **dependent Claims 29 and 34** - over Hickin in view of Ford and U.S. Patent 4,025,684 issued May 24, 1977 to Neidhardt ("Neidhardt"); and
- (c) **dependent Claim 42** - over Hickin.

It is respectfully submitted that each of these rejections of the Examiner is overcome by the remarks that follow.

Applicant's Invention

Pursuant to independent Claim 24, the Applicant's invention is directed at a pipe assembly for installation in a borehole, the pipe assembly comprising:

- (a) a pipe, wherein the pipe is comprised of a protective coating; and
- (b) a flexible sleeve surrounding the pipe, wherein the flexible sleeve is comprised of a continuous length of a flexible sleeve material.

Furthermore, dependent Claim 25 claims that the flexible sleeve material is “seamless,” dependent Claim 30 claims that the flexible sleeve is comprised of a length of a hose, dependent Claim 31 claims that the length of hose is continuous and seamless and dependent Claim 35 claims that the flexible sleeve is comprised of a length of an industrial hose.

As discussed in the Application at Page 1, line 12 - Page 2, line 12, in the underground installation of pipes, the longevity or durability of the pipe following its installation is dependent upon the structural integrity or soundness of the pipe at the time of installation. Further, to enhance the longevity, the pipe is often provided with a corrosion-resistant, microbial resistant or other protective coating.

However, where the pipe includes a protective coating, the longevity or durability of the pipe following its installation will be further dependent upon the structural integrity or soundness of the protective coating at the time of the installation.

As a result, the integrity of the pipe and its protective coating must be substantially maintained or not adversely affected during its installation within or through the borehole as any damage to the pipe or cracking, breaking, tearing or abrasion of the protective coating may negatively impact the structural integrity of the pipe. For instance, damage to the protective coating permits access to the underlying pipe such that deleterious or injurious substances or materials may corrode or deteriorate the pipe and ultimately weaken its structure.

The Applicant’s invention is directed at a pipe assembly which reduces the likelihood of any damage, particularly impact, collision or abrasion damage, to the pipe and its protective coating during its installation in a borehole. (Page 5, lines 9 - 22; Page 23, lines 24 - 32; Page 26, lines 12 - 21 of the Application).

Thus, the Applicant's pipe assembly for installation in a borehole, as claimed, includes a pipe comprised of a protective coating and a flexible sleeve surrounding the pipe.

The "protective coating" is described at Page 8, lines 14 - 21 as being comprised of "any substance, material or film applied to, spread upon or otherwise covering, overlying or comprising at least a portion of the pipe which is provided to reduce or inhibit any corrosion or other degradation of the pipe following its installation in the borehole." (Also refer to Page 26, lines 2 - 10 of the Application).

In addition, as discussed at Page 8, line 23 - 31 of the Application:

"Further, the pipe assembly is comprised of a flexible sleeve surrounding the pipe. The flexible sleeve is provided to reduce the likelihood of any damage to or abrasion or bruising of the pipe and the protective coating during the installation in the borehole. The flexible sleeve surrounds or covers the complete or entire circumference of the pipe. In addition, the flexible sleeve extends along at least a portion of the pipe length and preferably extends along substantially the entire pipe length intended to be installed within the borehole or to pass through the borehole during the installation. In other words, the sleeve preferably surrounds any portion of the pipe and its protective coating which are likely to contact the ground or the borehole during installation." (Also refer to the Application at Page 26, lines 12 - 21).

The flexible sleeve as claimed is comprised of a flexible sleeve material. The flexible sleeve material is selected to provide the desired flexibility, as discussed at Page 8, line 33 - Page 9, line 9 of the Application, while also providing the desired amount or degree of impact, collision or abrasion resistance to the pipe positioned within the flexible sleeve. Additionally, the flexible sleeve material is selected to have sufficient strength and durability to facilitate or be compatible with the insertion of the flexible sleeve within the borehole and the advancement of the flexible sleeve through the borehole. (Page 28, lines 21 - 31 of the Application).

As well, the flexible sleeve is preferably continuous (Claim 24) and seamless (Claim 25) to enhance the protection provided by the flexible sleeve. The Application states the following:

“The length of the flexible sleeve may be comprised of a two or more sections or portions of flexible sleeve material having their adjacent ends affixed, joined or otherwise fastened together to form the flexible sleeve. ... However, whenever two or more sections or portions are required to be fastened together, the possibility exists that the sections or portions may become disconnected, unfastened or torn at the connection point during installation. As a result, the length of the flexible sleeve material is preferably comprised of a single or unitary section or portion of flexible material extending between the first and second sleeve ends. In other words, in the preferred embodiment, the flexible sleeve is comprised of a continuous length of the flexible sleeve material.” (Page 9, lines 11 - 25 of the Application; refer also to Page 26, line 32 - Page 27, line 4 of the Application).

“... in the preferred embodiment, the flexible sleeve material is seamless. Thus, the flexible sleeve is preferably comprised of a continuous seamless length of the flexible sleeve material such that the flexible sleeve material extends between the first and second sleeve ends without any seams or joins in the flexible sleeve material. Thus, as discussed above, the continuous length of flexible sleeve material preferably does not include any circumferential seams or joins. However, in addition, the continuous length of flexible sleeve material does not include any longitudinally oriented seams or joins.” (Page 10, lines 16 - 23 of the Application).

“ ... in the preferred embodiment, the flexible sleeve (28) is comprised of a continuous length of a seamless flexible sleeve material (30). In other words, the flexible sleeve (28) preferably does not include any longitudinal, circumferential or other seams or joins within the flexible sleeve material (30).” (Page 27, lines 6 - 10 of the Application).

“As a result, in the preferred embodiment, the flexible sleeve (28) is comprised of a length of a hose (50). Accordingly, as discussed above, the length of the hose (50) is both continuous and seamless.” (Page 27, lines 18 - 20 of the Application).

Anticipation (Hickin) -

As stated, the Examiner has rejected **independent Claim 24** and **dependent Claims 25, 26, 30, 31 and 35 - 40** under 35 U.S.C. 102(b) as being as being anticipated by Hickin.

However, in order to anticipate a claim, the reference must teach each and every element of the claim (U.S. Manual of Patent Examining Procedure “MPEP” §2131).

Hickin is directed at a sewage disposal hose. Specifically, referring to Figure 5, Hickin discloses a protective tubular sleeve (10a) for covering a “conventional type of sewage disposal hose” (17) (Column 2, lines 33 - 40 and lines 49 - 56 of Hickin).

Referring to the Office Action, the Examiner indicates that the hose (17) discloses the Applicant’s claimed “pipe comprised of a protective coating.” However, it is respectfully submitted that Hickin does NOT disclose the hose (17) including a protective coating.

In particular, as stated, Hickin describes a sleeve for placing over a “conventional sewage disposal hose” (Column 1, lines 53 - 54 of Hickin). Further, Hickin states that “the hose construction most commonly utilized is in the form of a pleated plastic tube such as vinyl polymer or the like reinforced by means of a wire spring imbedded or attached to the pleats thereof which permits the hose to be stretched for discharge or collapsed for storage” (Column 1, lines 29 - 34 of Hickin).

Further, referring to Figure 2, Column 2, lines 33 - 40 of Hickin refers to the “conventional type of sewage disposal hose” (17) which “generally consists of a tube of lightweight plastic material, i.e., polyvinylchloride reinforced internally with a light wire spring”, such that the hose (17) “can be compressed for storage with a length compressed of about 2 - 4 feet and extendible to about 10 - 12 feet in use.”

No further description or discussion of the hose (17) is provided by Hickin. Specifically, Hickin does NOT describe or discuss in any manner the hose (17) including a “protective coating” or a coating of any kind whatsoever. As stated, the hose (17) is simply described by Hickin as a conventional type of sewage disposal hose consisting of a polyvinylchloride reinforced internally with a light wire spring.

Furthermore, as discussed above, the Applicant’s “protective coating” is comprised of a substance, material or film applied to, spread upon or otherwise covering or overlying the pipe which is provided to reduce or inhibit any corrosion or other degradation of the pipe following its installation in the borehole. Thus, it is submitted that there would be no need whatsoever for the claimed “protective coating” to be provided for the sewage hose (17) of Hickin.

Rather, Hickin describes the placement of a “protective sleeve” over the conventional sewage hose. The “sleeve is formed of a light, flexible and durable material such as a plastic coated or impregnated fabric.” (Column 1, lines 53 - 65 of Hickin)

Referring to Figure 3, Column 2, lines 49 - 56 of Hickin states that the “protective sleeve 10a is formed of a light, flexible and durable material such as a vinyl or other plastic coated and/or impregnated fabric which may be sewed longitudinally to provide a tubular sleeve...” No further description or discussion of the protective sleeve (10a) is provided by Hickin.

However, referring to the Office Action, the Examiner indicates that the flexible sleeve (10a) is comprised of “a continuous length of a flexible, woven, seamless sleeve material, as recited in claims 24-26.” However, it is respectfully submitted that Hickin does NOT disclose the flexible sleeve (10a) as being “seamless.” In fact, Hickin expressly states that the sleeve material is sewed longitudinally to provide the flexible sleeve (10a), thus providing a longitudinal seam in the sleeve.

Further, referring to the Office Action, the Examiner states that “the sleeve extends the length of the hose, as recited in claims 30, 31, 35 and 36.” However, this limitation is not in fact recited in Claims 30, 31 and 35.

Claims 30 and 35 claim wherein the flexible sleeve is **comprised of** a length of a hose or an industrial hose respectively. In this regard, there is no description or discussion whatsoever in Hickin that the flexible sleeve (10a) may be comprised of a length of a hose. The only “hose” discussed in Hickin is the sewage disposal hose (17) which is indicated by the Examiner as being equivalent to the Applicant’s claimed “pipe.”

Claim 31 claims “wherein the length of the hose is continuous and seamless.” As set out above, Hickin does not disclose the flexible sleeve (10a) as being either “a length of a hose” or “seamless.”

As a result, it is respectfully submitted that Hickin does not teach a pipe assembly for installation in a borehole comprising “a pipe, wherein the pipe is comprised of a protective coating” and “a flexible sleeve surrounding the pipe, wherein the flexible sleeve is comprised of a continuous length of a flexible sleeve material”, as claimed by the Applicant in independent Claim 24.

Accordingly, Hickin does not teach each and every element of independent Claim 24 and therefore, Claim 24 is not anticipated by Hickin.

Further, it is respectfully submitted that Hickin does not teach “wherein the flexible sleeve material is seamless” as claimed in dependent Claim 25, “wherein the flexible sleeve is comprised of a length of a hose” as claimed in dependent Claim 30, “wherein the length of the hose is continuous and seamless” as claimed in dependent Claim 31 or “wherein the flexible sleeve is comprised of a length of an industrial hose” as claimed in dependent Claim 35.

Accordingly, Hickin does not teach each and every element of dependent Claims 25, 30, 31 or 35 and therefore, Claims 25, 30, 31 or 35 are not anticipated by Hickin.

Obviousness (Hickin) -

Further, the Examiner has rejected **dependent Claim 41** under 35 U.S.C. 103(a) as being unpatentable over Hickin. In particular, the Examiner states that it would have been an obvious design choice to provide a plurality of fasteners in a staggered configuration “since

applicant has not disclosed that solves any stated problem or is for any particular purpose and it appears that the invention would perform equally well with the fasteners aligned longitudinally.”

However, Page 18, lines 17 - 23 and Page 35, line 32 - Page 36, line 10 of the Application particularly discuss the purpose of the claimed staggered configuration. In particular, the Application states that the staggered configuration of the fasteners is preferable as compared to a configuration in which the fasteners are longitudinally aligned as it has been found that the staggered configuration inhibits or minimizes any tearing or damage to the flexible sleeve incurred by the fasteners.

As a result, it is respectfully submitted that the feature of Claim 41 is not an obvious design choice in light of Hickin.

Obviousness (Hickin and Ford) -

As well, the Examiner has rejected **dependent Claims 27, 28, 32 and 33** under 35 U.S.C. 103(a) as being unpatentable over Hickin in view of Ford.

Dependent **Claims 27 and 28** depend from dependent Claim 25 and independent Claim 24. Further, dependent **Claims 32 and 33** depend from dependent Claims 31 and 30 and independent Claim 24.

As detailed above, several of the features of Claims 24, 25, 30 and 31 are not disclosed by Hickin. It is respectfully submitted that these features are also not disclosed by Ford.

Ford is directed at the formation of a flexible fabric sleeve. Although Ford states that the sleeve is adapted “for bundling and protecting elongated articles, such as wires, cables, hoses and conduits” (Column 1, lines 5 - 8 of Ford), no further description of the “elongated articles” is provided by Ford. Certainly, there is NO discussion of the elongated articles having a “protective coating.”

Thus, neither Hickin nor Ford specifically describes a pipe assembly comprising “a pipe, wherein the pipe is comprised of a protective coating” and a “flexible sleeve surrounding the pipe,” as claimed by the Applicant in independent Claim 24.

Furthermore, Hickin indicates that the sewage disposal hose (17) may be compressed for storage to a length of 2 - 4 feet and extended for use to a length of 10 - 12 feet. However, the sleeve of Ford is not readily usable in this manner given the specific composition of the sleeve material of Ford.

Specifically, Ford describes a “kink-resistant” sleeve which is set or biased to a particular shape (Column 2, lines 30 - 45 of Ford). More particularly, the sleeve or tubular fabric has a “resilient set” which refers to the incorporation of a permanent set or a bias in the material which provides a given configuration that tends to remain in that configuration under ambient temperature conditions and in the absence of external stress. Thus, the “material readily deforms upon the application of externally applied stress but returns to substantially its original ‘set’ position upon the release of the stress.” (Column 4, lines 1 - 17 of Ford).

Thus, if the sleeve of Ford was used with the sewage hose of Hickin, the sleeve would likely be required to be “set” to a form capable of accommodating the hose in its extended position. However, this would appear to be undesirable given that it would likely cause difficulties in the compression and storage of the sewage hose when not in use.

As a result, it is respectfully submitted that there is no suggestion or motivation to modify Hickin in view of Ford. Rather, it is respectfully submitted that a person skilled in the art would not combine these references given the inherent disadvantages of using the “resilient set” sleeve material of Ford in combination with the compressible and extendible hose of Hickin. In other words, a person skilled in the art would not have modified the sleeve (10a) of Hickin to utilize the sleeve material of Ford. It is submitted that there would be no motivation to make the combination if such combination would create issues of dysfunctionality or inoperability, as discussed above.

Thus, in summary, it is respectfully submitted that it would not have been obvious to combine the references in the manner set forth by the Examiner in order to provide the Applicant's claimed invention.

Obviousness (Hickin and Ford and Neidhardt) -

Further, the Examiner has rejected **dependent Claims 29 and 34** under 35 U.S.C. 103(a) as being unpatentable over Hickin in view of Ford and Neidhardt.

Dependent **Claim 29** depends from dependent Claims 27 and 25 and independent Claim 24. Dependent **Claim 34** depends from dependent Claims 32, 31 and 30 and independent Claim 24.

As detailed above, several of the features of Claims 24, 25, 30 and 31 are not disclosed by Hickin or Ford. It is respectfully submitted that these features are also not disclosed by Neidhardt.

Rather, Neidhardt appears to be cited by the Examiner simply for disclosing a "tubular fabric coated with plastics such as thermoplastic polyurethane material." Neidhardt does not describe or suggest in any manner the use of the tubular fabric for surrounding a pipe for installation in a borehole.

None of Hickin, Ford or Neidhardt describes a pipe assembly comprising "a pipe, wherein the pipe is comprised of a protective coating" and a "flexible sleeve surrounding the pipe," as claimed by the Applicant in independent Claim 24.

Thus, it is respectfully submitted that it would not have been obvious to combine the references in the manner set forth by the Examiner in order to provide the Applicant's claimed invention.

Summary

In summary, it is respectfully submitted that none of Hickin, Ford or Neidhardt, either alone or in combination, teach, disclose or suggest the Applicant's pipe assembly for installation in a borehole comprising "a pipe, wherein the pipe is comprised of a protective coating" and "a flexible sleeve surrounding the pipe, wherein the flexible sleeve is comprised of a continuous length of a flexible sleeve material", as claimed in independent Claim 24. It is therefore respectfully submitted that independent Claim 24 is allowable and allowance is respectfully requested.

Further, dependent Claims 25 - 43 all depend directly or indirectly from independent Claim 24. Thus, it is respectfully submitted that these dependent Claims are allowable for the distinctions defined therein as well as for the reasons supporting the allowability of Claim 24.

In this regard, it is respectfully submitted that none of Hickin, Ford or Neidhardt, either alone or in combination, teach, disclose or suggest:

- "wherein the flexible sleeve material is seamless" as claimed in dependent Claim 25;
- "wherein the flexible sleeve is comprised of a length of a hose" as claimed in dependent Claim 30;
- "wherein the length of the hose is continuous and seamless" as claimed in dependent Claim 31;
- "wherein the flexible sleeve is comprised of a length of an industrial hose" as claimed in dependent Claim 35.

Accordingly, allowance of dependent Claims 25 - 43 is also respectfully requested.

In view of the foregoing amendments and remarks, it is submitted that this Application is in condition for allowance and allowance is respectfully requested.

Respectfully submitted,
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